Koch, Kristine

From: Shephard, Burt
Sent: Friday, July 11, 2014 2:03 PM
To: Koch, Kristine; PETERSON Jenn L
Subject: RE: Portland Harbor PRG DDX Problem

Kristine, Jen,

DDE (termed total DDE in parts of the BERA) and total DDx risks to birds are presented in BERA tables ES-5, 8-50 and 11-3, the discussion of their calculation starts in BERA Section 8-1. BERA Attachments 14 and 16 provide details of TRV derivation and risk characterization not presented in the main BERA text. Jennifer has the spreadsheets used to derive the PRGs, they are the same ones I sent to Kristine to document the PRG calculations, although I suspect that during our calculations our working versions of the spreadsheets have additional exposure scenarios not in the spreadsheets Kristine has.

Total DDx and/or DDE risks were identified for two avian assessment endpoints, survival, reproduction and growth of invertivorous birds (spotted sandpiper) and piscivorous birds (bald eagle, belted kingfisher, osprey). Interesting to note that of the three avian assessment endpoints in the BERA, the two with DDT risks represent site birds higher within the food web than does the third avian assessment endpoint (omnivorous birds), which makes sense given the ability of DDx to biomagnify through a food web. The dietary pathway was a line of evidence for both invertivores and piscivores, the bird eggs were only a line of evidence for the piscivores. The bird egg pathway for DDE eventually did drop out , but only after the bald eagle was delisted as a threatened/endangered species. That occurred between the draft final and final BERA, and is likely part of the reason bird eggs show up in some of the earlier PRG tables.

Keep in mind, though, that a goal of the BERA was to be protective of the assessment endpoint (survival, reproduction and growth). Since total DDx screens in for both invertivorous and piscivorous birds via dietary ingestion, and screens in for piscivorous birds (kingfisher) via dietary ingestion, the objective going forward it to be protective of the assessment endpoint, not just the individual target ecological receptors that screened in at the end of the BERA. I think we can make an argument that to be protective of our assessment endpoint, we are justified in evaluating PRGs from any available line of evidence and calculation procedure we have available to us, and for which the data exist that allows us to make that calculation. Even though, as it turned out, the egg line of evidence appears slightly less sensitive than the dietary ingestion pathway. That's why we evaluate multiple lines of evidence for protecting our assessment endpoints.

FYI, attached is a little table I put together comparing avian dietary ingestion DDx and/or DDE TRVs used at various Superfund sites with DDT manufacturers, as part of the national EPA's workgroup update to EPA's toxicity reference value selection guidance (a 1996 EcoUpdate report Jennifer is likely familiar with). Its attached, and shows that Portland's avian TRVs were as low or lower than other DDx TRVs used at other Superfund sites around the country where DDT was historically manufactured. The conclusion I draw is that we had a protective BERA from the dietary ingestion standpoint. None of these other sites evaluated risks from DDx in bird eggs to my knowledge.

Site	Chemical	NOAEL mg/kg day	LOAEL mg/kg/day	Species
Palos Verdes, CA BERA 2003	Total DDx	1.456	3.641	Bald eagle
Palos Verdes, CA BERA 2003	Total DDx	0.957	2.393	Peregrine falcon (lowest TRVs of all avian receptors in P.V. BERA
Diamond Shamrock (Passaic River, NJ) SLERA 2005	Total DDx	None	1.5	All birds, TRV from EPA Region IX BTAG

Portland Harbor, OR BERA 2013	Total DDx	0.227	2.27	All birds, TRV based on barn owl and American kestrel toxicity data
Velsicol, MI BERA 1998	DDE	0.07	0.70	All birds, TRV based on great blue heron toxicity data
Diamond Shamrock (Passaic River, NJ) SLERA 2005	DDE	None	0.60	All birds, TRV from EPA Region IX BTAG
Fox River, WI BERA 2003	DDE	0.018	0.18	All birds, TRV based on black duck toxicity data
Portland Harbor, OR BERA 2013	DDE	0.032	0.32	All birds, TRV based on barn owl and American kestrel toxicity data

To answer your question from Wednesday, Jennifer, the DDx avian NOAEL TRV of 0.227 mg/kg/day used in the BERA was correctly taken from the DDT EcoSSL report, as shown in Figure 5-1 of EPA's EcoSSL review of DDT toxicity to birds, as was the 10x multiplier to derive the BERA LOAEL as per the BERA problem formulation.

Best regards,

Burt Shephard
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"Facts are stubborn things"
- John Adams

From: Koch, Kristine
Sent: Friday, July 11, 2014 11:35 AM
To: PETERSON Jenn L; Shephard, Burt
Subject: RE: Portland Harbor PRG DDX Problem

Jen – not sure what you're saying. Burt's response was for the site-wide RI/FS (as he termed "in-water") and was not specific to any media. Did you want DDE for the bird or the bird egg. Burt told me bird egg, but there is no risk for that assessment pathway from DDE.

For aluminum, I'll include whatever is the current value as ARAR.

Kristine Koch
Remedial Project Manager
USEPA, Office of Environmental Cleanup

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From: PETERSON Jenn L [mailto:PETERSON.Jenn@deq.state.or.us]
Sent: Friday, July 11, 2014 11:24 AM
To: Shephard, Burt
Cc: Koch, Kristine
Subject: RE: Portland Harbor PRG DDX Problem

Thanks Burt. This specific response is to the surface water RAO, but the arguments made in favor of dropping are the avian dietary / egg risk to DDX. Adding the sediment DDE PRG back into the table for piscivorous birds will correct the problem.

For aluminum, apparently EPA has not approved Oregon criteria, and this is on hold until the number is addressed nationally. However, in the interim for upland screening of GASCO groundwater, we are using the National Ambient Water Criteria (87 ug/L freshwater chronic, expressed as total for waters pH 6.5-9). NW Natural agreed to use this number in the risk assessment.

Is EPA not using NAWQ for aluminum for Portland Harbor until the NAWQ are revised to address the hardness issue? Since it is a risk driver for upland groundwater, upland soil, and was detected in elevated concentrations in in-water media (e.g. TZW, sediment) it would be good to coordinate on a number that EPA and DEQ agree on if possible. It would be great if you and Bob could work on this – I believe this would be much more effective than not assessing it due to concerns with the SLV. Let me know if I can assist in any way.

Thanks again for your time Wed.,

Jennifer

From: Shephard, Burt [mailto:Shephard.Burt@epa.gov]
Sent: Thursday, July 10, 2014 4:41 PM
To: PETERSON Jenn L
Cc: Koch, Kristine
Subject: RE: Portland Harbor PRG DDX Problem

Jen,

(b) (6) she strongly agrees with us that just because something screens out in the in-water risk assessments doesn't automatically means that LWG can screen out or drop that same chemical from upland sites (or presumably source control, although we didn't specifically talk about source control). Its a wrong position for LWG or individual PRPs to take on multiple levels. Glad we're also on the same page regarding BSAF assumptions and that DDE doesn't drop out of the avian lines of evidence in the in-water BERA. I'm forwarding this to Kristine, hopefully its nothing more than a miscommunication about different chemical forms of DDX and what should and shouldn't drop out of the PRG table.

Regarding your aluminum concerns, I'm sure that between Bob Gensemer and I we could give you some free consulting on how to pull together an aluminum water quality TRV that would be appropriate to the upland and groundwater conditions, relative to the existing EPA water quality criteria for aluminum. Meant to ask you, is aluminum listed in Oregon's water quality standards? If so you could argue its an ARAR, since unlike EPA criteria, Oregon's water quality standards can be legally enforced.

Best regards,

Burt Shephard
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- John Adams

From: PETERSON Jenn L [mailto:PETERSON.Jenn@deq.state.or.us]
Sent: Thursday, July 10, 2014 4:16 PM
To: Shephard, Burt
Subject: Portland Harbor PRG DDX Problem

Burt,

Please see the LWG's comments in the attached document: "2014-06-19 Att 1 COCs and PRGs Issue Statement. Pdf" regarding the DDX / DDE issue we discussed yesterday. I have cut out the DDX text in the file "DDX PRG Problem". The LWG is arguing that since DDX screens out they don't have to carry it forward, but as we discussed **DDE does not** and this PRG needs to be put back into the table.

Thanks for all the great discussion yesterday! Please call if you need help getting this resolved.

Jennifer

From: Koch, Kristine [mailto:Koch.Kristine@epa.gov]
Sent: Tuesday, July 08, 2014 9:30 AM
To: LIVERMAN Alex; Allen, Elizabeth; Audie Huber (audiehuber@ctuir.com); Bob Dexter; Brian Cunninghame (cunninghame@gorge.net); callie@ridolfi.com; Coffey, Scott; Conley, Alanna; Erin Madden (erin.madden@gmail.com); Fuentes, Rene; Gail Fricano (gfricano@indecon.com); Genevieve Angle (Genevieve.Angle@noaa.gov); Hagerman, Paul; Holly Partridge (Holly.Partridge@grandronde.org); JD Williams (jd@williamsjohnsonlaw.com); PETERSON Jenn L; Jeremy_Buck@fws.gov; Julie Weis (jweis@hk-law.com); Matt Johnson (matt@williamsjohnsonlaw.com); MCCLINCY Matt; Michael.karnosh@grandronde.org; POULSEN Mike; Muza, Richard; rdelvecchio@indecon.com DelVecchio; Robert.Neely@noaa.gov; rose@yakamafish-nsn.gov; Ryan Sudbury (Ryan.Sudbury@grandronde.org); Sheldrake, Sean; Shephard, Burt; Todd King (KingTW@cdmsmith.com); tomd@ctsi.nsn.us; GAINER Tom
Subject: FW: LWG Comments on Revised FS Section 2

FYI..

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From: Jennifer Woronets [mailto:jworonets@anchorqea.com]
Sent: Thursday, June 19, 2014 2:46 PM
To: Koch, Kristine
Cc: Jennifer Woronets; Carl Stivers; Amanda Shellenberger; Jim McKenna (jim.mckenna@verdantllc.com); Patty Dost; Bob Wyatt; Sheldrake, Sean; Muza, Richard; King, Todd W.
Subject: LWG Comments on Revised FS Section 2

Kristine,

Please find attached a submittal that addresses those portions of Section 2 of the revised FS for which EPA has indicated discussions have concluded and on which it is commencing to draft the revised text. Portions of this submittal also address two outstanding EPA information requests from the FS "Draft Actions Items Lists" that is updated and sent to you on Friday's including:

- LWG to propose alternative method for calculating Dioxin/Furan TEQ PRG for RAO 2 (see Attachment 3, Section 5).
- LWG to propose alternative Mn ecological water toxicity value (see Attachment 1, Section 5).

We sincerely hope that all this information will be valuable to EPA as it undertakes the process of revising Section 2. Please contact Bob Wyatt if you want to discuss any issue we have raised here.

Thank you,
Jen Woronets ☺
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